

# Work Order ID 72189

Tuesday, July 19, 2011 4:08:16 PM



Page 1

Item ID: D2574

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle, Aft In 205

Start Date: 7/19/2011 Start Qty: 12.00



Cust Item ID:

Required Date: 8/8/2011 Req'd Qty: 12.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date: 11-07-19

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D2574

Rev E

100

0.00



HAAS CNC VERTICAL MACHINING #1

HAAS I

Memo

0.00

HAAS CNC vertical machine #1

Program Batch No. 72189 Double check by: F.K. ☐ 1-Machine Step No 1 per Folio FA051 and inspect per attached Dimension Sheets 2-Machine Step No 2 per Folio FA051 and inspect per attached Dimension Sheets ☐ 3-Machine Step No 3 per Folio FA051 and insp

aml 11/08/11

12 1

PTO

110

0.00



CONVENTIONAL MILLING MACHINE

Mill Conv

Memo

0.00

Conventional Milling Machine

Machine keyway as per dwg D2573 & D2574

aml 11/08/11

SL 11-08-15

12

0

120

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

aml 11/08/11

SL 11-08-15

12

0

W/O: 72189		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D2574 PAR #: W/A Fault Category: MACHINING NCR: (Yes) No DQA: 11 Date: 11-08-22  
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: 11/8/22 Date: 11/8/22

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
11/08/11	100	1 part scrap, the 1" ball nose plunge into the 2.00" bore.  R.L. power surge process.	<u>[Signature]</u> 11/08/12 PSI-42	scrap and replace  Qty 1 B <u>71721</u>	<u>[Signature]</u> 11/08/12	B.A. 11/08/15	<u>[Signature]</u> 11/08/12 PSI-42	S 11/08/12

NOTE: Date & initial all entries

# Work Order ID 72189

Tuesday, July 19, 2011 4:08:16 PM



Page 2

Item ID: D2574

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle, Aft In 205

Start Date: 7/19/2011 Start Qty: 12.00



Cust Item ID:

Required Date: 8/8/2011 Req'd Qty: 12.00

Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

130

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

BA 11/08/15

12

0

140

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

12

0

11/08/16

150

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Memo

0.00

Powder Coating

START TIME:

FINISH TIME:

OVEN TEMPERATURE:

12:45

3200F

M 117745

17/15

12x0 m 11/08/17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 72189

Tuesday, July 19, 2011 4:08:16 PM



Page 3

Item ID: D2574

Accept



Setup Start



Revision ID:

Stop



Item Name: Saddle, Aft In 205

Start Date: 7/19/2011 Start Qty: 12.00



Cust Item ID:

Required Date: 8/8/2011 Req'd Qty: 12.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

12 0 M 11/08/17

170

Identify as per dwg & Stock Location: 434

0.00



Packaging

Memo

0.00

Packaging

11/8/18 SP (12)

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/8/18 J

11-08-18 (12)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, July 19, 2011 4:08:22 PM

Page 1

Work Order ID: 72189

Parent Item: D2574

Parent Item Name: Saddle, Aft In 205



Start Date: 7/19/2011

Required Date: 8/8/2011

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP Rev: 1 As Per RevE 06-01-27 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6101-005		Manufactured	No			110	Each	13.0000	1	12			
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Saddle Billet



FK 11/08/09  
any

Location

Loc Qty

Loc Code

MAT045

10

70677

10

MAT046

3

66966

3

B 7/721

12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	72189
<b>Description: Saddle, Aft Inboard</b>	<b>Part Number:</b>	D2574
<b>Inspection Dwg: D2574 Rev. E</b>		Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2574 Rev. E and record below:

				Recorded Actual Dimensions				By	Date
Dim	Min	Max	Go/No Go Gauge	1	2	3	4		
A	0.438	0.443		.440	.440	.440	.440		
B	1.745	1.755		1.749	1.750	1.750	1.750		
C	3.495	3.505		3.500	3.500	3.500	3.500		
D	1.745	1.755		1.749	1.750	1.750	1.750		
E	7.990	8.010		8.002	8.002	8.002	8.002		
F	0.490	0.510		.499	.501	.500	.500		
G	0.257	0.262		.258	.259	.258	.258		
H	0.375	0.380		.376	.376	.376	.377		
I	0.490	0.510		.502	.502	.502	.499		
J	1.174	1.184		1.179	1.179	1.179	1.178		
K	0.558	0.578		.569	.569	.569	.566		
L	1.174	1.184		1.179	1.179	1.179	1.178		
M	1.365	1.375		1.369	1.369	1.370	1.368		
N	2.495	2.505		2.499	2.500	2.500	2.500		
O	4.119	4.129		4.123	4.123	4.124	4.122		
P	0.115	0.135		.125	.126	.126	.125		
Q	0.115	0.135		.125	.125	.125	.125		
R	0.240	0.260		.251	.252	.251	.251		
S	0.115	0.135		.129	.129	.128	.128		
T	0.178	0.198		.188	.188	.188	.188		
U	3.210	3.250		3.230	3.230	3.230	3.229		
V	0.230	0.250		.240	.240	.240	.240		
W	0.115	0.135		.125	.125	.125	.127		
X	0.307	0.312		.310	.311	.310	.310		
Y	0.760	0.765		.760	.760	.760	.760		
Z	0.352	0.372		.366	.366	.366	.365		
AA	0.470	0.530		.500	.500	.500	.500		
AB	0.615	0.635		.624	.624	.625	.627		
AC	0.053	0.073		.063	.063	.063	.063		
AD	0.240	0.260		.250	.250	.250	.249		
AE	1.500	1.520		1.510	1.510	1.510	1.510		
AF	0.115	0.135		.125	.125	.125	.135		
AG	0.240	0.280		.250	.250	.250	.255		
AH	0.240	0.260		.250	.251	.250	.250		
AI	2.000	2.020		2.001	2.001	2.001	2.002		
AJ	0.023	0.043		.033	.033	.033	.033		
Accept/Reject									

Measured by:	<i>mf</i>
Date:	11/08/12

Audited by:	<i>B.A</i>
Date:	11/08/15

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.27	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b> 72189
<b>Description:</b> Saddle, Aft Inboard	<b>Part Number:</b> D2574
<b>Inspection Dwg:</b> D2574 Rev. E	<b>Page 1 of 1</b>

Inspect dimensions highlighted on inspection sheet drawing D2574 Rev. E and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				15	26	37	48		
A	0.438	0.443		.440	.440	.440	.440		
B	1.745	1.755		1.750	1.750	1.750	1.750		
C	3.495	3.505		3.500	3.500	3.500	3.500		
D	1.745	1.755		1.750	1.750	1.750	1.750		
E	7.990	8.010		8.000	8.001	8.000	8.001		
F	0.490	0.510		.500	.500	.500	.501		
G	0.257	0.262		.258	.258	.258	.258		
H	0.375	0.380		.377	.377	.377	.377		
I	0.490	0.510		.500	.498	.500	.500		
J	1.174	1.184		1.178	1.178	1.178	1.178		
K	0.558	0.578		.566	.564	.567	.566		
L	1.174	1.184		1.178	1.178	1.178	1.178		
M	1.365	1.375		1.368	1.368	1.368	1.368		
N	2.495	2.505		2.499	2.500	2.500	2.500		
O	4.119	4.129		4.122	4.122	4.122	4.122		
P	0.115	0.135		.125	.124	.126	.126		
Q	0.115	0.135		.135	.135	.135	.135		
R	0.240	0.260		.252	.251	.252	.251		
S	0.115	0.135		.129	.126	.128	.128		
T	0.178	0.198		.188	.188	.188	.188		
U	3.210	3.250		3.230	3.228	3.228	3.230		
V	0.230	0.250		.240	.240	.240	.241		
W	0.115	0.135		.124	.126	.122	.124		
X	0.307	0.312		.310	.311	.310	.310		
Y	0.760	0.765		.760	.760	.760	.760		
Z	0.352	0.372		.363	.363	.362	.363		
AA	0.470	0.530		.500	.500	.500	.500		
AB	0.615	0.635		.627	.626	.626	.626		
AC	0.053	0.073		.063	.063	.063	.063		
AD	0.240	0.260		.247	.248	.248	.248		
AE	1.500	1.520		1.510	1.510	1.509	1.510		
AF	0.115	0.135		.135	.135	.135	.135		
AG	0.240	0.280		.266	.270	.275	.275		
AH	0.240	0.260		.250	.250	.250	.251		
AI	2.000	2.020		2.001	2.001	2.001	2.001		
AJ	0.023	0.043		.033	.033	.033	.033		
Accept/Reject									

Measured by: <i>cmr</i>
Date: 11/08/12

Audited by: <i>h a</i>
Date: 11/08/15

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.27	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	<i>[Signature]</i>

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	72189
<b>Description:</b> Saddle, Aft Inboard		<b>Part Number:</b>	D2574
<b>Inspection Dwg:</b> D2574 Rev. E		Page 1 of 1	

Inspect dimensions highlighted on inspection sheet drawing D2574 Rev. E and record below:


Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				#9	#10	#11	#12		
A	0.438	0.443		.440	.440	.440	.440		
B	1.745	1.755		1.750	1.750	1.750	1.750		
C	3.495	3.505		3.500	3.500	3.500	3.500		
D	1.745	1.755		1.750	1.750	1.750	1.750		
E	7.990	8.010		8.001	8.001	8.001	8.001		
F	0.490	0.510		.501	.501	.502	.500		
G	0.257	0.262		.258	.258	.258	.258		
H	0.375	0.380		.372	.372	.376	.376		
I	0.490	0.510		.498	.501	.499	.500		
J	1.174	1.184		1.177	1.177	1.178	1.179		
K	0.558	0.578		.564	.568	.568	.567		
L	1.174	1.184		1.177	1.177	1.178	1.179		
M	1.365	1.375		1.368	1.368	1.369	1.370		
N	2.495	2.505		2.500	2.500	2.500	2.500		
O	4.119	4.129		4.122	4.122	4.122	4.124		
P	0.115	0.135		.124	.126	.127	.123		
Q	0.115	0.135		.135	.135	.135	.135		
R	0.240	0.260		.252	.252	.252	.252		
S	0.115	0.135		.127	.126	.127	.126		
T	0.178	0.198		.188	.188	.188	.188		
U	3.210	3.250		3.230	3.230	3.230	3.230		
V	0.230	0.250		.240	.240	.240	.241		
W	0.115	0.135		.122	.125	.123	.124		
X	0.307	0.312		.310	.310	.311	.311		
Y	0.760	0.765		.760	.760	.760	.760		
Z	0.352	0.372		.363	.363	.363	.364		
AA	0.470	0.530		.500	.500	.500	.500		
AB	0.615	0.635		.626	.626	.626	.625		
AC	0.053	0.073		.063	.063	.063	.063		
AD	0.240	0.260		.247	.249	.249	.251		
AE	1.500	1.520		1.510	1.511	1.510	1.510		
AF	0.115	0.135		.135	.135	.135	.135		
AG	0.240	0.280		.270	.270	.270	.270		
AH	0.240	0.260		.250	.251	.250	.251		
AI	2.000	2.020		2.001	2.002	2.002	2.001		
AJ	0.023	0.043		.033					
Accept/Reject									

Measured by:	/
Date:	11-08-15

Audited by:	B.A
Date:	11/08/15

Rev	Date	Change	Revised by	Approved
A		New Issue	RF	
B	02.09.27	Re-format; Added Rev. D	KJ	
C	02.10.11	Re-format; Added DT8682, DT8683, DT8684	KJ	
D	05.05.05	Added dimension AI	KJ/RF	
E	05.12.05	Added dimension AJ	KJ/JLM	

WITHOUT NOTICE  
WORK ORDER  
NO. 72189

05.12.06 




MATERIAL: 7075-T7351 (QQ-A-250/12)  
(REF DART SPEC. D6102-003)  
FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1  
POWDER COAT GLOSS WHITE (REF 4.3.5.1) PER  
DART QSI 005 4.3  
BREAK ALL SHARP EDGES 0.010 TO 0.020  
TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

1 ENGRAVE PART AND BATCH NUMBER IN THIS AREA TO MAX DEPTH OF 0.010

2 CHAMFER 0.063" x 45° AROUND THIS SURFACE (TYPICAL 2 PLACES)

3 CHAMFER 0.063 x 45° ALL AROUND

4 CHAMFER 0.033 x 45° (SEE DETAIL C)

E	05.07.13	ADD CHAMFER ON RIDGE NOTE 4
D	02.09.06	ADD RIDGES; TIGHTEN TOLERANCES
C	99.10.22	INCRP. DEO 9123/9079/9102 ADD DIMENSIONS. PER TSR A1177
B	96.12.02	ADD GRAIN DIR., 0.438 WAS 0.425
A	96.09.16	NEW ISSUE
DESIGN DS		 <b>DART AEROSPACE LTD.</b> MARKHAM, ONTARIO, CANADA
DRAWN BY PH		
CHECKED 	APPROVED 	DRAWING NO. <b>D2574</b>
DATE 05.07.13		TITLE INNER AFT SADDLE
		REV. SHEET 1 OF 1 SCALE

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DART AEROSPACE LTD.

DETAIL C  
SCALE 2:1

SECTION A-A

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries